

Graphing Linear Equations

Suggested grade level: 8, 9 or 10

Corresponding software: *Mathville SkiQuations*, *Graph Match* activity

Curriculum expectations addressed:

- * Identify graphs and equations of lines in the form $y = mx + b$, $y = b$, $x = a$
- * Recognize the graph characteristics of slope properties such as steepness, direction, positive or negative rate of change
- * Calculate y as a function of x
- * Complete a table of values from a graph

Prerequisites: a basic understanding of slope and plotting points on the xy -plane

Materials required: Copies of the following blackline worksheet and pencils

Suggestions for use: On the worksheet, students are required to graph four lines, each with a slope of 0, undefined, 1 or -1. Students should then write the equation of their line in the box provided and check their work by completing a table of values and plotting the points.

Variations and extensions: Do worksheets for other slopes ($1/2$ or $-1/2$, 2 or -2, etc.) or start by filling in the equation box and have the students complete the graph, table of values and slope. Have the students compare the graphs that they do and discuss their similarities and differences. Challenge the students to create their own examples.

Graphing Worksheet

Graph a line with a **slope = 0**.

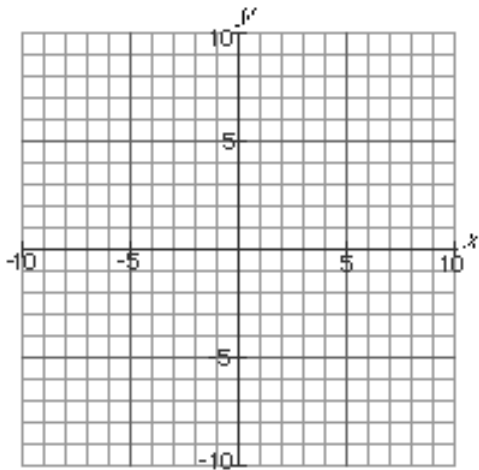


Table of Values

x	y

Equation of your line:

Check your equation by filling in the table of values above and plotting the points.

Graph a line with an **undefined slope**.

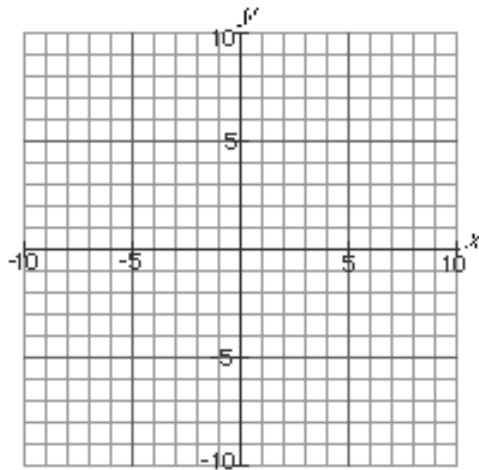


Table of Values

x	y

Equation of your line:

Check your equation by filling in the table of values above and plotting the points.

Graph a line with a **slope = 1**.

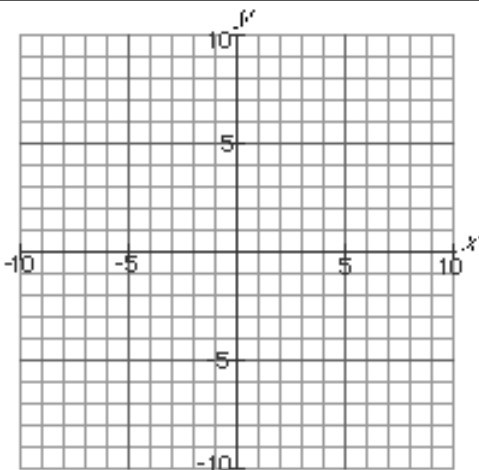


Table of Values

x	y

Equation of your line:

Check your equation by filling in the table of values above and plotting the points.

Graph a line with a **slope = -1**.

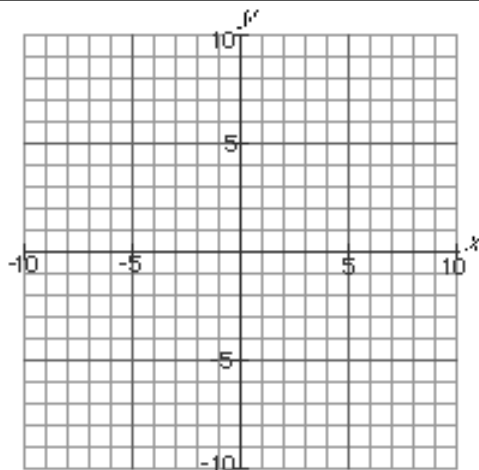


Table of Values

x	y

Equation of your line:

Check your equation by filling in the table of values above and plotting the points.